

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method comprising:  
establishing a first connection between a first network element and a mobile node;  
establishing a second connection between the first network element and a second network element in response to a handoff request from the mobile node;  
requesting, by the first network element, header compression state information from the second network element;  
receiving, at the first network element, the requested header compression state information from the second network element; and  
receiving, at the first network element via the first connection, a portion of the header compression state information from the mobile node.
2. (Canceled)
3. (Previously Presented) A method comprising:  
sending a router solicitation message from a mobile node to a first router;  
receiving a router advertisement message from the first router at the mobile node in response to the router solicitation message, wherein the router advertisement message includes a header compression capability option;  
sending a binding update message from the mobile node to a second router, wherein the binding update message includes a routing header pointing to the first router and at least one destination option; and  
receiving a binding acknowledgment message from the second router at the mobile node, wherein the binding acknowledgment message includes a routing header pointing to the first router.
- 4.-6. (Canceled)

7. (Currently Amended) A non-transitory tangible computer-readable medium having instructions stored thereon, the instructions comprising:

- establishing a first connection with a mobile node;
- establishing a second connection with a network element in response to a handoff request from the mobile node;
- requesting header compression state information from the network element;
- receiving the requested header compression state information from the network element; and
- receiving, via the first connection, a portion of the header compression state information from the mobile node.

8. (Canceled)

9. (Previously Presented) A non-transitory tangible computer-readable medium having instructions stored thereon, the instructions comprising:

- sending a router solicitation message to a first router;
- receiving a router advertisement message from the first router in response to the router solicitation message, wherein the router advertisement message includes a header compression capability option;
- sending a binding update message to a second router, wherein the binding update message includes a routing header pointing to the first router and at least one destination option; and
- receiving a binding acknowledgment message from the second router, wherein the binding acknowledgment message includes a routing header pointing to the first router.

10. (Previously Presented) The method of claim 1, wherein the handoff request is a handoff request from the first network element to the second network element.

11. (Previously Presented) The method of claim 1, further comprising forwarding, by the first network element, a message from the second network element to the mobile node, wherein the message indicates a most recently acknowledged header compression state sent from the second network element to the first network element.

12. (Previously Presented) The method of claim 1, further comprising receiving messages from the mobile node, wherein the messages are compressed according to the received header compression state information.

13. (Canceled)

14. (Previously Presented) The method of claim 3, wherein the at least one destination option comprises a header compression destination option.

15. (Currently Amended) A method comprising:  
initiating, by a mobile node, a handoff procedure to a first network element from a second network element;  
establishing a connection between the mobile node and the first network element;  
[[and]]  
sending at least a portion of header compression state information from the mobile node to the first network element as part of the handoff procedure; and  
receiving, at the mobile node, a most recently acknowledged header compression state from the second network element.

16. (Canceled)

17. (Currently Amended) The method of claim [[16]] 15, wherein the header compression state information comprises the most recently acknowledged header compression state received by the second network element.

18. (Currently Amended) The method of claim 15, further comprising, after [[said]] the sending at least a portion of header compression state information, sending compressed packets from the mobile node to the first network element according to the header compression state information.

19. (Previously Presented) The method of claim 18, wherein the compressed packets comprise partial or compressed headers.

20. (Currently Amended) A non-transitory tangible computer-readable medium having instructions stored thereon, the instructions comprising:

initiating, by a mobile node, a handoff procedure to a first network element from a second network element;

establishing a connection between the mobile node and the first network element;

[[and]]

sending at least a portion of header compression state information from the mobile node to the first network element as part of the handoff procedure; and

receiving, at the mobile node, a most recently acknowledged header compression state from the second network element.

21. (Previously Presented) A method comprising:  
receiving a router solicitation message from a mobile node at a first network element;

sending a router advertisement message from the first network element to the mobile node in response to the router solicitation message, wherein the router advertisement message includes a header compression capability option;

receiving a binding acknowledgment message at the first network element from a second network element, wherein the binding acknowledgment message includes header compression state information utilized by the second network element.

22. (Canceled)

23. (Currently Amended) The method of claim ~~[[22]]~~ 21, wherein the at least one destination option comprises a header compression destination option.

24. (Previously Presented) The method of claim 21, wherein the header compression state information includes a most recently acknowledged header state from the second network element.

25. (Previously Presented) The method of claim 24, wherein the most recently acknowledged header state includes both up-link and down-link states.

26. (Previously Presented) The method of claim 21, further comprising forwarding the binding acknowledgement message from the first network element to the mobile node.

27. (Previously Presented) A non-transitory tangible computer-readable medium having instructions stored thereon, the instructions comprising:

receiving a router solicitation message from a mobile node;

sending a router advertisement message to the mobile node in response to the router solicitation message, wherein the router advertisement message includes a header compression capability option;

receiving a binding acknowledgment message from a network element, wherein the binding acknowledgment message includes header compression state information utilized by the network element.